



PROJECT MANUAL FOR

SULLIVAN LAKE SHORELINE STABILIZATION

Submitted To:

SULLIVAN COUNTY
PARK AND RECREATION DISTRICT
RR 3, Box 6
Sullivan, Indiana 47882

INTERNATIONAL SCIENCE & TECHNOLOGY, INC.
10501 Hague Road
Fishers, Indiana 46038

March, 1991

CONTRACT DOCUMENTS

Document	Description
Special Conditions	Location, Scope, and Special Requirements
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2.	Information for Bidders
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6.	Payment Bond
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Contract Drawings

Permit Applications

U.S. Army Corps of Engineers Section 404 Permit

State of Indiana Department of Natural Resources Construction in a Floodway Permit

SPECIAL CONDITIONS

Project Location

The work to be conducted under this project consists of structural and vegetative shoreline stabilization at Sullivan Lake, Sullivan County Indiana. Sullivan Lake is a 507 acre reservoir northeast of the town of Sullivan, Indiana. The lake covers portions of four USGS quadrangle maps: Dugger, Sullivan, Hymera, and Shelburn. Sullivan Lake is within Section 26, Township 8 North, Range 9 West.

Scope of Work

The Contract Documents, Specifications and accompanying Drawings are intended to allow the Sullivan County Park and Recreation District, hereafter referred to as SCPRD, to complete shoreline stabilization measures at two areas of the lakeshore, as specified in Sheet 2 of the Contract Drawings. The Contract Documents, Specifications, and Drawings provide the detail necessary for a Contractor to submit a lump sum bid to the SCPRD for work on one or both areas of the shoreline where stabilization is required. It is the preference of the SCPRD to let a single contract for both areas of the shoreline. Area A (see Sheet 2) is a section of shoreline approximately 750 feet in length. Work at this area will include but not be limited to the following:

- Grading and excavation to achieve required slope
- Installation of filter fabric
- Placement of rip-rap
- Seeding of vegetation above the rip-rap area of shoreline
- Mulching seeded area.

At Area B, approximately 350 feet of shoreline will be stabilized with willow seedlings. Work at this area will include but not be limited to the following:

- Grading and excavation to achieve required slope
- Planting of seedlings.

The Contractor is expected to provide all labor, materials, and equipment necessary to complete the work to the satisfaction of the SCPRD. Any equipment, materials, or labor required by the Contractor to complete the work described that is not specifically referred to in the Contract Documents or Drawings shall be furnished by the Contractor at his expense.

Definitions

The following definitions are intended to clarify those that are found in Document 12, General Conditions.

1. **OWNER.** The term owner shall mean the Sullivan County Park and Recreation District (SCPRD).
2. **ENGINEER.** The term engineer shall mean the duly authorized representative of the OWNER.
3. **CONTRACTOR.** The term contractor refers to the person, firm, or corporation that is responsible for accomplishing all work on the project, as designated in the Specifications. The contractor shall supervise and direct the work using his best skill and attention; and shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for overall coordination of the work. The contractor shall be responsible to the SCPRD for the conduct of his employees, and will ensure that all persons who are employed or utilized by the contractor, including subcontractors, are skilled in the task(s) assigned to them.
4. **INSPECTOR.** The Inspector will be a duly authorized representative of the Owner with specific responsibilities for ensuring successful completion of each and all aspects of the work. The Inspector and the Engineer may or may not be the same individual.
4. **SUBCONTRACTOR.** The term subcontractor shall mean a person, firm, or corporation having a direct contract with the contractor or with any other sub-contractor for the performance of a part of the work for the project.
5. **CONTRACT DOCUMENTS.** In addition to those documents specified in Section 1.7 of the General Conditions, the Contract Documents include Special Conditions, Contract Specifications, Operations and Maintenance, Inspection, and the Contract Drawings (Sheets 1 through 6).
6. **DESIGN DRAWINGS.** Reference to "design drawings" is synonymous with "drawings", "plans", and "engineering plans". In all cases, reference is made to the Contract Drawings, entitled "Sullivan Lake Shoreline Stabilization, Indiana Department of Natural Resources Lake Enhancement Program".
7. **PROJECT.** The term project refers specifically to work at Sullivan Lake, Sullivan County Indiana, that is conducted toward completion of the shoreline stabilization described in the Contract Specifications.

Potential Conflicts

In the event of conflicts between various elements of the Contract Documents, the order of precedence shall be as follows: Special Conditions, Contract Specifications, General Conditions, and Contract

Drawings.

Subcontracting of Contract

If the Contractor intends to subcontract any portion of the work, this must be stated as provided for in the Bid Documents. After award of the contract, no subcontractor can be added without prior written approval of the Owner. Subcontracting will not release the Contractor from liability under the contract and bond.

It will be the responsibility of the Contractor to maintain good communication among himself, potential subcontractors, and the Owner. The Owner or its duly appointed representatives will not be required to deal directly with subcontractors of the Contractor. Failure of the Contractor to provide proper and qualified field management and to maintain communication to the satisfaction of the Owner will be cause for termination of the contract.

Submission of Bids

It will be the responsibility of the Contractor to fully acquaint himself with the physical project site(s) and the nature of the work to be performed. The submission of a bid will represent a thorough understanding of all requirements of the Contract Documents by the Contractor, and will signify that the Contractor is in agreement with all of the terms and intent of the Contract Documents. Questions concerning conflicts within the documents, or technical questions, will be assumed to have been resolved prior to submittal of a bid. The Owner will not recognize claims for unanticipated costs resulting from a lack of preparedness, familiarity with site-specific requirements, or a lack of understanding of the Contract Documents.

Award of Contract

Award of a contract will be made to the responsive bidder based on the total bid amount. The Owner reserves the right to reject any and all bids if it is deemed to be in the best interest of the Owner.

Pre-construction Conference

Prior to signing the Contract Documents and prior to beginning construction, a pre-construction conference will be held. Representatives of the Contractor, including any Subcontractors, the Owner, the Engineer, and other interested agencies and parties will be present to discuss the time and sequence of construction, methods and plans of operation, payment, and any other relevant issues. The Contractor will be informed of the time and location of the meeting by the Owner.

Schedule of Construction

At the pre-construction conference, a schedule of construction will be submitted by the Contractor for approval by the Owner. The schedule will show the time required for each element of the work, and the total time required to complete the project.

Completion of Work

The contractor shall begin work within 10 calendar days of the date of the Notice to Proceed, and shall complete the work within 60 calendar days.

Lowering the Pool Elevation

The Owner will be responsible for lowering the pool elevation by approximately three feet, from 479 feet (normal pool) to 476 feet at least 30 days prior to construction. The pool will be maintained at this level during the construction period.

ADVERTISEMENT FOR BIDS

SULLIVAN COUNTY PARK AND RECREATION DISTRICT

RURAL ROUTE 3, BOX 6

SULLIVAN, INDIANA 47882

Separate sealed BIDS for the construction of (briefly describe nature, scope, and major elements of the work) Shoreline stabilization at two areas of the Sullivan Lake shoreline as noted on Sheet No. 2 of the Contract Drawings.
Area A to be stabilized with a combination of rip-rap revetment and vegetation.
Area B to be stabilized with vegetation only. Lump sum bids for either or both areas required.
will be received by _____
at the office of _____
until _____, (Standard Time – Daylight Savings Time) _____,
19_____, and then at said office publicly opened and read aloud.

The CONTRACT DOCUMENTS may be examined at the following locations:

Sullivan County Park and Recreation District Office.

Copies of the CONTRACT DOCUMENTS may be obtained at the office of _____
located at _____
upon payment of \$_____ for each set.

Any BIDDER, upon returning the CONTRACT DOCUMENTS promptly and in good condition, will be refunded his payment, and any non-bidder upon so returning the CONTRACT DOCUMENTS will be refunded \$_____.

Date

INFORMATION FOR BIDDERS

BIDS will be received by SULLIVAN COUNTY PARK AND RECREATION DISTRICT
(herein called the "OWNER"), at _____
until _____, 19_____, and then at said office publicly opened and read
aloud.

Each BID must be submitted in a sealed envelope, addressed to SULLIVAN
COUNTY PARK AND RECREATION DISTRICT at RR3, BOX 6, SULLIVAN, IN 47882
Each sealed envelope containing a BID must be plainly marked on the outside as BID
for IDNR LAKE ENHANCEMENT PROGRAM; SULLIVAN L. SHORELINE STABILIZATION and the
envelope should bear on the outside the name of the BIDDER, his address, his license
number if applicable and the name of the project for which the BID is submitted. If
forwarded by mail, the sealed envelope containing the BID must be enclosed in another
envelope addressed to the OWNER at _____

All BIDS must be made on the required BID form. All blank spaces for BID prices
must be filled in, in ink or typewritten, and the BID form must be fully completed and
executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all
BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening
of BIDS or authorized postponement thereof. Any BID received after the time and date
specified shall not be considered. No BIDDER may withdraw a BID within 60 days after
the actual date of the opening thereof. Should there be reasons why the contract cannot
be awarded within the specified period, the time may be extended by mutual agree-
ment between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in
the BID Schedule by examination of the site and a review of the drawings and specifica-
tions including ADDENDA. After BIDS have been submitted, the BIDDER shall not as-
sert that there was a misunderstanding concerning the quantities of WORK or of the
nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is
pertinent to, and delineates and describes, the land owned and rights-of-way acquired
or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construc-
tion of the PROJECT. Information obtained from an officer, agent, or employee of the
OWNER or any other person shall not affect the risks or obligations assumed by the
CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID bond payable to the OWNER for five
percent of the total amount of the BID. As soon as the BID prices have been compared,
the OWNER will return the BONDS of all except the three lowest responsible BIDDERS.
When the Agreement is executed the bonds of the two remaining unsuccessful BID-
DERS will be returned. The BID BOND of the successful BIDDER will be retained until
the payment BOND and performance BOND have been executed and approved, after
which it will be returned. A certified check may be used in lieu of a BID BOND.

A performance BOND and a payment BOND, each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or payment BONDS and performance BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the performance BOND and payment BOND within ten (10) calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten (10) days of receipt of acceptable performance BOND, payment BOND and Agreement signed by the party to whom the Agreement was awarded shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within ten (10) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the ten (10) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the SUPPLEMENTAL GENERAL CONDITIONS.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.

Inspection trips for prospective BIDDERS will leave from the office of the

_____ at _____

The ENGINEER is _____ His address

is _____

BID

Proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____ doing business as _____*.

To the _____
_____ (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of _____

_____ in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to his own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under this contract on or before a date to be specified in the NOTICE TO PROCEED and to fully complete the PROJECT within _____ consecutive calendar days thereafter. BIDDER further agrees to pay as liquidated damages, the sum of \$_____ for each consecutive calendar day thereafter as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

*Insert "a corporation", "a partnership", or "an individual" as applicable.

BIDDER agrees to perform all the work described in the CONTRACT DOCUMENTS for the following unit prices or lump sum:

BID SCHEDULE

NOTE: BIDS shall include sales tax and all other applicable taxes and fees.

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
<u>AREA A.</u>					
1.	Rip-rap revetment	tons	_____	1,508	_____
2.	Excavation	cu. yds.	_____	1,333	_____
3.	Geotextile (filter fab.)	sq. yds.	_____	1,451	_____
4.	Clearing, Grubbing	acres	_____	0.45	_____
5.	Seeding/Planting	sq. yds.	_____	2,083	_____

AREA B.

1.	Seedlings (incl.'s planting)	each	_____	300	_____
2.	Excavation	cu.yds.	_____	236	_____
3.	Clearing/Grubbing	acres	_____	0.10	_____

NO.	ITEM	UNIT	UNIT PRICE	AMOUNT	TOTAL PRICE
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TOTAL OF BID \$ _____
LUMP SUM PRICE (if applicable) \$ _____

Respectfully submitted:

_____ Signature	_____ Address
_____ Title	_____ Date
_____ License Number (if applicable)	_____

(SEAL—if BID is by a corporation)

Attest _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____
_____ as Principal, and
_____ as Surety, are hereby
held and firmly bound unto _____ as OWNER
in the penal sum of _____
for the payment of which, well and truly to be made, we hereby jointly and severally
bind ourselves, successors and assigns.

Signed, this _____ day of _____, 19_____.
The Condition of the above obligation is such that whereas the Principal has submitted
to _____ a certain BID,
attached hereto and hereby made a part hereof to enter into a contract in writing, for the

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal (L.S.)

Surety

By: _____

IMPORTANT—Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 19_____, by
and between _____, hereinafter called "OWNER"
(Name of Owner). (an individual)

and _____ doing business as (an individual,) or (a
partnership,) or (a corporation) hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and agreements herein-
after mentioned:

1. The CONTRACTOR will commence and complete the construction of

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment,
labor and other services necessary for the construction and completion of the PROJECT
described herein.

3. The CONTRACTOR will commence the work required by the CONTRACT DOC-
UMENTS within _____ calendar days after the date of the NOTICE TO PRO-
CEED and will complete the same within _____ calendar days unless the period
for completion is extended otherwise by the CONTRACT DOCUMENTS.

4. The CONTRACTOR agrees to perform all of the WORK described in the CON-
TRACT DOCUMENTS and comply with the terms therein for the sum of \$ _____,
or as shown in the BID schedule.

5. The term "CONTRACT DOCUMENTS" means and includes the following:

- (A) Advertisement For BIDS
- (B) Information For BIDDERS
- (C) BID
- (D) BID BOND
- (E) Agreement

(F) General Conditions

(G) SUPPLEMENTAL GENERAL CONDITIONS

(H) Payment BOND

(I) Performance BOND

(J) NOTICE OF AWARD

(K) NOTICE TO PROCEED

(L) CHANGE ORDER

(M) DRAWINGS prepared by _____
numbered _____ through _____, and dated _____,
19 _____

(N) SPECIFICATIONS prepared or issued by _____

dated _____, 19 _____

(O) ADDENDA:

No. _____, dated _____, 19 _____

No. _____, dated _____, 19 _____

No. _____, dated _____, 19 _____

No. _____, dated _____, 19 _____

No. _____, dated _____, 19 _____

No. _____, dated _____, 19 _____

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the General Conditions such amounts as required by the CONTRACT DOCUMENTS.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in (_____) each of which shall be deemed an original on the date first above written.

(Number of Copies)

OWNER:

BY _____

Name _____

(Please Type)

Title _____

(SEAL)

ATTEST:

Name _____

(Please Type)

Title _____

CONTRACTOR:

BY _____

Name _____

(Please Type)

Address _____

(SEAL)

ATTEST:

Name _____

(Please Type)

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal,
(Corporation, Partnership or Individual)

and _____
(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of Owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____ Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____ 19_____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials for or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(number)
one of which shall be deemed an original, this the _____ day of _____
19 _____.

ATTEST:

(Principal) Secretary

(SEAL)

Principal

By _____(s)

(Address)

Witness as to Principal

(Address)

ATTEST:

Witness as to Surety

(Address)

Surety

By _____
Attorney-in-Fact

(Address)

NOTE: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the PROJECT is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal, and
(Corporation, Partnership, or Individual)

(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto _____

(Name of owner)

(Address of Owner)

hereinafter called OWNER, in the penal sum of _____

Dollars, \$(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 19____, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each
(Number)
one of which shall be deemed an original, this the _____ day of _____
19_____.

ATTEST:

(Principal) Secretary

(SEAL)

(Witness as to Principal)

(Address)

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety

(Address)

Principal

By _____ (s)

(Address)

Surety

By _____
Attorney-in-Fact

(Address)

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

NOTICE OF AWARD

To: _____

PROJECT Description: _____

The OWNER has considered the BID submitted by you for the above described WORK in response to its Advertisement for Bids dated _____, 19_____, and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of \$_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 19_____.

Owner

By _____

Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by _____

this the _____ day of _____, 19_____

By _____

Title _____

NOTICE TO PROCEED

To: _____

Date: _____
Project: _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 19_____, on or before _____, 19_____, and you are to complete the WORK within _____ consecutive calendar days thereafter. The date of completion of all WORK is therefore _____, 19_____.

Owner
By _____
Title _____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____

_____,
this the _____ day
of _____, 19____

By _____
Title _____

CHANGE ORDER

Order No. _____

Date: _____

Agreement Date: _____

NAME OF PROJECT: _____

OWNER: _____

CONTRACTOR: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

Justification:

Change to CONTRACT PRICE:

Original CONTRACT PRICE \$ _____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ _____

The CONTRACT PRICE due to this CHANGE ORDER will be (increased) (decreased) by: \$ _____

The new CONTRACT PRICE including this CHANGE ORDER will be \$ _____

Change to CONTRACT TIME:

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____ (Date).

Approvals Required:

To be effective this Order must be approved by the Federal agency if it changes the scope or objective of the PROJECT, or as may otherwise be required by the SUPPLEMENTAL GENERAL CONDITIONS.

Requested by: _____

Recommended by: _____

Ordered by: _____

Accepted by: _____

Federal Agency Approval (where applicable) _____

GENERAL CONDITIONS

1. Definitions
2. Additional Instructions and Detail Drawings
3. Schedules, Reports and Records
4. Drawings and Specifications
5. Shop Drawings
6. Materials, Services and Facilities
7. Inspection and Testing
8. Substitutions
9. Patents
10. Surveys, Permits, Regulations
11. Protection of Work, Property, Persons
12. Supervision by Contractor
13. Changes in the Work
14. Changes in Contract Price
15. Time for Completion and Liquidated Damages
16. Correction of Work

17. Subsurface Conditions
18. Suspension of Work, Termination and Delay
19. Payments to Contractor
20. Acceptance of Final Payment as Release
21. Insurance
22. Contract Security
23. Assignments
24. Indemnification
25. Separate Contracts
26. Subcontracting
27. Engineer's Authority
28. Land and Rights-of-Way
29. Guaranty
30. Arbitration
31. Taxes

1. DEFINITIONS

1.1 Wherever used in the CONTRACT DOCUMENTS, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

1.2 ADDENDA—Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the CONTRACT DOCUMENTS, DRAWINGS and SPECIFICATIONS, by additions, deletions, clarifications or corrections.

1.3 BID—The offer or proposal of the BIDDER submitted on the prescribed form setting forth the prices for the WORK to be performed.

1.4 BIDDER—Any person, firm or corporation submitting a BID for the WORK.

1.5 BONDS—Bid, Performance, and Payment Bonds and other instruments of security, furnished by the CONTRACTOR and his surety in accordance with the CONTRACT DOCUMENTS.

1.6 CHANGE ORDER—A written order to the CONTRACTOR authorizing an addition, deletion or revision in the WORK within the general scope of the CONTRACT DOCUMENTS, or authorizing an adjustment in the CONTRACT PRICE or CONTRACT TIME.

1.7 CONTRACT DOCUMENTS—The contract, including Advertisement For Bids, Information For Bidders, BID, Bid Bond, Agreement, Payment Bond, Performance Bond, NOTICE OF AWARD, NOTICE TO PROCEED, CHANGE ORDER, DRAWINGS, SPECIFICATIONS, and ADDENDA.

1.8 CONTRACT PRICE—The total monies payable to the CONTRACTOR under the terms and conditions of the CONTRACT DOCUMENTS.

1.9 CONTRACT TIME—The number of calendar days stated in the CONTRACT DOCUMENTS for the completion of the WORK.

1.10 CONTRACTOR—The person, firm or corporation with whom the OWNER has executed the Agreement.

1.11 DRAWINGS—The part of the CONTRACT DOCUMENTS which show the characteristics and scope of the WORK to be performed and which have been prepared or approved by the ENGINEER.

1.12 ENGINEER—The person, firm or corporation named as such in the CONTRACT DOCUMENTS.

1.13 FIELD ORDER—A written order effecting a change in the WORK not involving an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, issued by the ENGINEER to the CONTRACTOR during construction.

1.14 NOTICE OF AWARD—The written notice of the acceptance of the BID from the OWNER to the successful BIDDER.

1.15 NOTICE TO PROCEED—Written communication issued by the OWNER to the CONTRACTOR authorizing him to proceed with the WORK and establishing the date of commencement of the WORK.

1.16 OWNER—A public or quasi-public body or authority, corporation, association, partnership, or individual for whom the WORK is to be performed.

1.17 PROJECT—The undertaking to be performed as provided in the CONTRACT DOCUMENTS.

1.18 RESIDENT PROJECT REPRESENTATIVE—The authorized representative of the OWNER who is assigned to the PROJECT site or any part thereof.

1.19 SHOP DRAWINGS—All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a SUBCONTRACTOR, manufacturer, SUPPLIER or distributor, which illustrate how specific portions of the WORK shall be fabricated or installed.

1.20 SPECIFICATIONS—A part of the CONTRACT DOCUMENTS consisting of written descriptions of a technical nature of materials, equipment, construction systems, standards and workmanship.

1.21 SUBCONTRACTOR—An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other SUBCONTRACTOR for the performance of a part of the WORK at the site.

1.22 SUBSTANTIAL COMPLETION—That date as certified by the ENGINEER when the construction of the PROJECT or a specified part thereof is sufficiently completed, in accordance with the CONTRACT DOCUMENTS, so that the PROJECT or specified part can be utilized for the purposes for which it is intended.

1.23 SUPPLEMENTAL GENERAL CONDITIONS—

Modifications to General Conditions required by a Federal agency for participation in the PROJECT and approved by the agency in writing prior to inclusion in the CONTRACT DOCUMENTS, or such requirements that may be imposed by applicable state laws.

1.24 **SUPPLIER**—Any person or organization who supplies materials or equipment for the WORK, including that fabricated to a special design, but who does not perform labor at the site.

1.25 **WORK**—All labor necessary to produce the construction required by the CONTRACT DOCUMENTS, and all materials and equipment incorporated or to be incorporated in the PROJECT.

1.26 **WRITTEN NOTICE**—Any notice to any party of the Agreement relative to any part of this Agreement in writing and considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at his last given address, or delivered in person to said party or his authorized representative on the WORK.

2. ADDITIONAL INSTRUCTIONS AND DETAIL DRAWINGS

2.1 The CONTRACTOR may be furnished additional instructions and detail drawings, by the ENGINEER, as necessary to carry out the WORK required by the CONTRACT DOCUMENTS.

2.2 The additional drawings and instruction thus supplied will become a part of the CONTRACT DOCUMENTS. The CONTRACTOR shall carry out the WORK in accordance with the additional detail drawings and instructions.

3. SCHEDULES, REPORTS AND RECORDS

3.1 The CONTRACTOR shall submit to the OWNER such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the CONTRACT DOCUMENTS for the WORK to be performed.

3.2 Prior to the first partial payment estimate the CONTRACTOR shall submit construction progress schedules showing the order in which he proposes to carry on the WORK, including dates at which he will start the various parts of the WORK, estimated date of completion of each part and, as applicable:

3.2.1. The dates at which special detail drawings will be required; and

3.2.2. Respective dates for submission of SHOP DRAWINGS, the beginning of manufacture, the testing and the installation of materials, supplies and equipment.

3.3 The CONTRACTOR shall also submit a schedule of payments that he anticipates he will earn during the course of the WORK.

4. DRAWINGS AND SPECIFICATIONS

4.1 The intent of the DRAWINGS and SPECIFICATIONS is that the CONTRACTOR shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the WORK in accordance with the CONTRACT DOCUMENTS and all incidental work necessary to complete the PROJECT in an acceptable manner, ready for use, occupancy or operation by the OWNER.

4.2 In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figure dimensions on DRAWINGS shall govern over scale dimensions, and detailed DRAWINGS shall govern over general DRAWINGS.

4.3 Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, in writing, who shall promptly correct such inconsistencies or ambiguities in writing. WORK done by the CONTRACTOR after his discovery of such discrepancies, inconsistencies or ambiguities shall be done at the CONTRACTOR'S risk.

5. SHOP DRAWINGS

5.1 The CONTRACTOR shall provide SHOP DRAWINGS as may be necessary for the prosecution of the WORK as required by the CONTRACT DOCUMENTS. The ENGINEER shall promptly review all SHOP DRAWINGS. The ENGINEER'S approval of any SHOP DRAWING shall not release the CONTRACTOR from responsibility for deviations from the CONTRACT DOCUMENTS. The approval of any SHOP DRAWING which substantially deviates from the requirement of the CONTRACT DOCUMENTS shall be evidenced by a CHANGE ORDER.

5.2 When submitted for the ENGINEER'S review, SHOP DRAWINGS shall bear the CONTRACTOR'S certification that he has reviewed, checked and approved the SHOP DRAWINGS and that they are in conformance with the requirements of the CONTRACT DOCUMENTS.

5.3 Portions of the WORK requiring a SHOP DRAWING or sample submission shall not begin until the SHOP DRAWING or submission has been approved by the ENGINEER. A copy of each approved SHOP DRAWING and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6. MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the CONTRACT DOCUMENTS, the CONTRACTOR shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete, and deliver the WORK within the specified time.

6.2 Materials and equipment shall be so stored as to insure the preservation of their quality and fitness for the WORK. Stored materials and equipment to be incorporated in the WORK shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies and equipment shall be in accordance with samples submitted by the CONTRACTOR and approved by the ENGINEER.

6.5 Materials, supplies or equipment to be incorporated into the WORK shall not be purchased by the

CONTRACTOR or the SUBCONTRACTOR subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller.

7. INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the PROJECT shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the CONTRACT DOCUMENTS.

7.2 The OWNER shall provide all inspection and testing services not required by the CONTRACT DOCUMENTS.

7.3 The CONTRACTOR shall provide at his expense the testing and inspection services required by the CONTRACT DOCUMENTS.

7.4 If the CONTRACT DOCUMENTS, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any WORK to specifically be inspected, tested, or approved by someone other than the CONTRACTOR, the CONTRACTOR will give the ENGINEER timely notice of readiness. The CONTRACTOR will then furnish the ENGINEER the required certificates of inspection, testing or approval.

7.5 Inspections, tests or approvals by the engineer or others shall not relieve the CONTRACTOR from his obligations to perform the WORK in accordance with the requirements of the CONTRACT DOCUMENTS.

7.6 The ENGINEER and his representatives will at all times have access to the WORK. In addition, authorized representatives and agents of any participating Federal or state agency shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records. The CONTRACTOR will provide proper facilities for such access and observation of the WORK and also for any inspection, or testing thereof.

7.7 If any WORK is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for his observation and replaced at the CONTRACTOR'S expense.

7.8 If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the WORK in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such WORK is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such WORK is not found to be defective, the CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate CHANGE ORDER shall be issued.

8. SUBSTITUTIONS

8.1 Whenever a material, article or piece of equip-

ment is identified on the DRAWINGS or SPECIFICATIONS by reference to brand name or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the CONTRACT DOCUMENTS by reference to brand name or catalogue number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Any cost differential shall be deductible from the CONTRACT PRICE and the CONTRACT DOCUMENTS shall be appropriately modified by CHANGE ORDER. The CONTRACTOR warrants that if substitutes are approved, no major changes in the function or general design of the PROJECT will result. Incidental changes or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the CONTRACT PRICE or CONTRACT TIME.

9. PATENTS

9.1 The CONTRACTOR shall pay all applicable royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and save the OWNER harmless from loss on account thereof, except that the OWNER shall be responsible for any such loss when a particular process, design, or the product of a particular manufacturer or manufacturers is specified, however if the CONTRACTOR has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the ENGINEER.

10. SURVEYS, PERMITS, REGULATIONS

10.1 The OWNER shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the WORK together with a suitable number of bench marks adjacent to the WORK as shown in the CONTRACT DOCUMENTS. From the information provided by the OWNER, unless otherwise specified in the CONTRACT DOCUMENTS, the CONTRACTOR shall develop and make all detail surveys needed for construction such as slope stakes, batter boards, stakes for pile locations and other working points, lines, elevations and cut sheets.

10.2 The CONTRACTOR shall carefully preserve bench marks, reference points and stakes and, in case of willful or careless destruction, he shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

10.3 Permits and licenses of a temporary nature necessary for the prosecution of the WORK shall be secured and paid for by the CONTRACTOR unless otherwise stated in the SUPPLEMENTAL GENERAL CONDITIONS. Permits, licenses and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by the OWNER, unless otherwise specified. The CONTRACTOR shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the WORK as drawn and specified. If the CONTRACTOR

observes that the CONTRACT DOCUMENTS are at variance therewith, he shall promptly notify the ENGINEER in writing, and any necessary changes shall be adjusted as provided in Section 13. CHANGES IN THE WORK.

11. PROTECTION OF WORK, PROPERTY AND PERSONS

11.1 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the WORK. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to all employees on the WORK and other persons who may be affected thereby, all the WORK and all materials or equipment to be incorporated therein, whether in storage on or off the site, and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

11.2 The CONTRACTOR will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the WORK, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the WORK may affect them. The CONTRACTOR will remedy all damage, injury or loss to any property caused, directly or indirectly, in whole or in part, by the CONTRACTOR, any SUBCONTRACTOR or anyone directly or indirectly employed by any of them or anyone for whose acts any of them be liable, except damage or loss attributable to the fault of the CONTRACT DOCUMENTS or to the acts or omissions of the OWNER or the ENGINEER or anyone employed by either of them or anyone for whose acts either of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of the CONTRACTOR.

11.3 In emergencies affecting the safety of persons or the WORK or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, shall act to prevent threatened damage, injury or loss. He will give the ENGINEER prompt WRITTEN NOTICE of any significant changes in the WORK or deviations from the CONTRACT DOCUMENTS caused thereby, and a CHANGE ORDER shall thereupon be issued covering the changes and deviations involved.

12. SUPERVISION BY CONTRACTOR

12.1 The CONTRACTOR will supervise and direct the WORK. He will be solely responsible for the means, methods, techniques, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the WORK a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the WORK.

13. CHANGES IN THE WORK

13.1 The OWNER may at any time, as the need arises,

order changes within the scope of the WORK without invalidating the Agreement. If such changes increase or decrease the amount due under the CONTRACT DOCUMENTS, or in the time required for performance of the WORK, an equitable adjustment shall be authorized by CHANGE ORDER.

13.2 The ENGINEER, also, may at any time, by issuing a FIELD ORDER, make changes in the details of the WORK. The CONTRACTOR shall proceed with the performance of any changes in the WORK so ordered by the ENGINEER unless the CONTRACTOR believes that such FIELD ORDER entitles him to a change in CONTRACT PRICE or TIME, or both, in which event he shall give the ENGINEER WRITTEN NOTICE thereof within seven (7) days after the receipt of the ordered change. Thereafter the CONTRACTOR shall document the basis for the change in CONTRACT PRICE or TIME within thirty (30) days. The CONTRACTOR shall not execute such changes pending the receipt of an executed CHANGE ORDER or further instruction from the OWNER.

14. CHANGES IN CONTRACT PRICE

14.1 The CONTRACT PRICE may be changed only by a CHANGE ORDER. The value of any WORK covered by a CHANGE ORDER or of any claim for increase or decrease in the CONTRACT PRICE shall be determined by one or more of the following methods in the order of precedence listed below:

- (a) Unit prices previously approved.
- (b) An agreed lump sum.
- (c) The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work. In addition there shall be added an amount to be agreed upon but not to exceed fifteen (15) percent of the actual cost of the WORK to cover the cost of general overhead and profit.

15. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 The date of beginning and the time for completion of the WORK are essential conditions of the CONTRACT DOCUMENTS and the WORK embraced shall be commenced on a date specified in the NOTICE TO PROCEED.

15.2 The CONTRACTOR will proceed with the WORK at such rate of progress to insure full completion within the CONTRACT TIME. It is expressly understood and agreed, by and between the CONTRACTOR and the OWNER, that the CONTRACT TIME for the completion of the WORK described herein is a reasonable time, taking into consideration the average climatic and economic conditions and other factors prevailing in the locality of the WORK.

15.3 If the CONTRACTOR shall fail to complete the WORK within the CONTRACT TIME, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the BID for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the CONTRACT DOCUMENTS.

15.4 The CONTRACTOR shall not be charged with liquidated damages or any excess cost when the delay in completion of the WORK is due to the following, and the CONTRACTOR has promptly given WRITTEN NOTICE of such delay to the OWNER or ENGINEER.

15.4.1 To any preference, priority or allocation

order duly issued by the OWNER.

15.4.2 To unforeseeable causes beyond the control and without the fault or negligence of the CONTRACTOR, including but not restricted to, acts of God, or of the public enemy, acts of the OWNER, acts of another CONTRACTOR in the performance of a contract with the OWNER, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and abnormal and unforeseeable weather; and

15.4.3 To any delays of SUBCONTRACTORS occasioned by any of the causes specified in paragraphs 15.4.1 and 15.4.2 of this article.

16. CORRECTION OF WORK

16.1 The CONTRACTOR shall promptly remove from the premises all WORK rejected by the ENGINEER for failure to comply with the CONTRACT DOCUMENTS, whether incorporated in the construction or not, and the CONTRACTOR shall promptly replace and re-execute the WORK in accordance with the CONTRACT DOCUMENTS and without expense to the OWNER and shall bear the expense of making good all WORK of other CONTRACTORS destroyed or damaged by such removal or replacement.

16.2 All removal and replacement WORK shall be done at the CONTRACTOR'S expense. If the CONTRACTOR does not take action to remove such rejected WORK within ten (10) days after receipt of WRITTEN NOTICE, the OWNER may remove such WORK and store the materials at the expense of the CONTRACTOR.

17. SUBSURFACE CONDITIONS

17.1 The CONTRACTOR shall promptly, and before such conditions are disturbed, except in the event of an emergency, notify the OWNER by WRITTEN NOTICE of:

17.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the CONTRACT DOCUMENTS; or

17.1.2 Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in WORK of the character provided for in the CONTRACT DOCUMENTS.

17.2 The OWNER shall promptly investigate the conditions, and if he finds that such conditions do so materially differ and cause an increase or decrease in the cost of, or in the time required for, performance of the WORK, an equitable adjustment shall be made and the CONTRACT DOCUMENTS shall be modified by a CHANGE ORDER. Any claim of the CONTRACTOR for adjustment hereunder shall not be allowed unless he has given the required WRITTEN NOTICE, provided that the OWNER may, if he determines the facts so justify, consider and adjust any such claims asserted before the date of final payment.

18. SUSPENSION OF WORK, TERMINATION AND DELAY

18.1 The OWNER may suspend the WORK or any portion thereof for a period of not more than ninety days or such further time as agreed upon by the CONTRACTOR, by WRITTEN NOTICE to the CONTRACTOR and the ENGINEER which notice shall fix the date on which WORK shall be resumed. The CONTRACTOR

will resume that WORK on the date so fixed. The CONTRACTOR will be allowed an increase in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, directly attributable to any suspension.

18.2 If the CONTRACTOR is adjudged a bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property, or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or applicable laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to SUBCONTRACTORS or for labor, materials or equipment or if he disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction of the WORK or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the CONTRACT DOCUMENTS, then the OWNER may, without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety a minimum of ten (10) days from delivery of a WRITTEN NOTICE, terminate the services of the CONTRACTOR and take possession of the PROJECT and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the WORK by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the WORK is finished. If the unpaid balance of the CONTRACT PRICE exceeds the direct and indirect costs of completing the PROJECT, including compensation for additional professional services, such excess SHALL BE PAID TO THE CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a CHANGE ORDER.

18.3 Where the CONTRACTOR'S services have been so terminated by the OWNER, said termination shall not affect any right of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of monies by the OWNER due the CONTRACTOR will not release the CONTRACTOR from compliance with the CONTRACT DOCUMENTS.

18.4 After ten (10) days from delivery of a WRITTEN NOTICE to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the PROJECT and terminate the Contract. In such case, the CONTRACTOR shall be paid for all WORK executed and any expense sustained plus reasonable profit.

18.5 If, through no act or fault of the CONTRACTOR, the WORK is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any request for payment within thirty (30) days after it is submitted, or the OWNER fails to pay the CONTRACTOR substantially the sum approved by the ENGINEER or awarded by arbitrators within thirty (30) days of its approval and presentation, then the CONTRACTOR may, after ten (10) days from delivery of a WRITTEN NOTICE to the OWNER and the ENGINEER, terminate the CONTRACT and recover from the OWNER payment for all WORK exe-

outed and all expenses sustained. In addition and in lieu of terminating the CONTRACT, if the ENGINEER has failed to act on a request for payment or if the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon ten (10) days written notice to the OWNER and the ENGINEER stop the WORK until he has been paid all amounts then due, in which event and upon resumption of the WORK, CHANGE ORDERS shall be issued for adjusting the CONTRACT PRICE or extending the CONTRACT TIME or both to compensate for the costs and delays attributable to the stoppage of the WORK.

18.6 If the performance of all or any portion of the WORK is suspended, delayed, or interrupted as a result of a failure of the OWNER or ENGINEER to act within the time specified in the CONTRACT DOCUMENTS, or if no time is specified, within a reasonable time, an adjustment in the CONTRACT PRICE or an extension of the CONTRACT TIME, or both, shall be made by CHANGE ORDER to compensate the CONTRACTOR for the costs and delays necessarily caused by the failure of the OWNER or ENGINEER.

19. PAYMENTS TO CONTRACTOR

19.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the WORK but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER, as will establish the OWNER's title to the material and equipment and protect his interest therein, including applicable insurance. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or return the partial payment estimate to the CONTRACTOR indicating in writing his reasons for refusing to approve payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within ten (10) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER shall retain ten (10) percent of the amount of each payment until final completion and acceptance of all work covered by the CONTRACT DOCUMENTS. The OWNER at any time, however, after fifty (50) percent of the WORK has been completed, if he finds that satisfactory progress is being made, shall reduce retainage to five (5%) percent on the current and remaining estimates. When the WORK is substantially complete (operational or beneficial occupancy), the retained amount may be further reduced below five (5) percent to only that amount necessary to assure completion. On completion and acceptance of a part of the WORK on which the price is stated separately in the CONTRACT DOCUMENTS, payment may be made in full, including retained percentages, less authorized deductions.

19.2 The request for payment may also include an allowance for the cost of such major materials and

equipment which are suitably stored either at or near the site.

19.3 Prior to SUBSTANTIAL COMPLETION, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the WORK. Such use shall not constitute an acceptance of such portions of the WORK.

19.4 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the CONTRACT DOCUMENTS. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the WORK, or the restoration of any damaged WORK except such as may be caused by agents or employees of the OWNER.

19.5 Upon completion and acceptance of the WORK, the ENGINEER shall issue a certificate attached to the final payment request that the WORK has been accepted by him under the conditions of the CONTRACT DOCUMENTS. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within thirty (30) days of completion and acceptance of the WORK.

19.6 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of SUB-CONTRACTORS, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the WORK. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the CONTRACT DOCUMENTS, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, his Surety, or any third party. In paying any unpaid bills of the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the CONTRACT DOCUMENTS by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

19.7 If the OWNER fails to make payment thirty (30) days after approval by the ENGINEER, in addition to other remedies available to the CONTRACTOR, there shall be added to each such payment interest at the maximum legal rate commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

20. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

20.1 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and all liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this WORK and for every act and neglect of the OWNER and others relating to or arising out of this WORK. Any payment, however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the CONTRACT DOCUMENTS or the Performance BOND and Payment BONDS.

21. INSURANCE

21.1 The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR'S execution of the WORK, whether such execution be by himself or by any SUBCONTRACTOR or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

21.1.1 Claims under workmen's compensation, disability benefit and other similar employee benefit acts;

21.1.2 Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees;

21.1.3 Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees;

21.1.4 Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and

21.1.5 Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom.

21.2 Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverages afforded under the policies will not be cancelled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

21.3 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, liability insurance as hereinafter specified:

21.3.1 CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting him from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any

operations under the CONTRACT DOCUMENTS, whether such operations be by himself or by any SUBCONTRACTOR under him, or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR under him. Insurance shall be written with a limit of liability of not less than \$500,000 for all damages arising out of bodily injury, including death, at any time resulting therefrom, sustained by any one person in any one accident; and a limit of liability of not less than \$500,000 aggregate for any such damages sustained by two or more persons in any one accident. Insurance shall be written with a limit of liability of not less than \$200,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$200,000 aggregate for any such damage sustained by two or more persons in any one accident.

21.3.2 The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.

21.4 The CONTRACTOR shall procure and maintain, at his own expense, during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the work is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of his employees at the site of the PROJECT and in case any work is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of his employees not otherwise protected.

21.5 The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER, and the OWNER.

22. CONTRACT SECURITY

22.1 The CONTRACTOR shall within ten (10) days after the receipt of the NOTICE OF AWARD furnish the OWNER with a Performance Bond and a Payment Bond in penal sums equal to the amount of the CONTRACT PRICE, conditioned upon the performance by

the CONTRACTOR of all undertakings, covenants, terms, conditions and agreements of the CONTRACT DOCUMENTS, and upon the prompt payment by the CONTRACTOR to all persons supplying labor and materials in the prosecution of the WORK provided by the CONTRACT DOCUMENTS. Such BONDS shall be executed by the CONTRACTOR and a corporate bonding company licensed to transact such business in the state in which the WORK is to be performed and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. The expense of these BONDS shall be borne by the CONTRACTOR. If at any time a surety on any such BOND is declared a bankrupt or loses its right to do business in the state in which the WORK is to be performed or is removed from the list of Surety Companies accepted on Federal BONDS, CONTRACTOR shall within ten (10) days after notice from the OWNER to do so, substitute an acceptable BOND (or BONDS) in such form and sum and signed by such other surety or sureties as may be satisfactory to the OWNER. The premiums on such BOND shall be paid by the CONTRACTOR. No further payments shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable BOND to the OWNER.

23. ASSIGNMENTS

23.1 Neither the CONTRACTOR nor the OWNER shall sell, transfer, assign or otherwise dispose of the Contract or any portion thereof, or of his right, title or interest therein, or his obligations thereunder, without written consent of the other party.

24. INDEMNIFICATION

24.1 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses and expenses including attorney's fees arising out of or resulting from the performance of the WORK, provided that any such claims, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property including the loss of use resulting therefrom; and is caused in whole or in part by any negligent or willful act or omission of the CONTRACTOR, and SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

24.2 In any and all claims against the OWNER or the ENGINEER, or any of their agents or employees, by any employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under workmen's compensation acts, disability benefit acts or other employee benefits acts.

24.3 The obligation of the CONTRACTOR under this paragraph shall not extend to the liability of the ENGINEER, his agents or employees arising out of the preparation or approval of maps, DRAWINGS, opinions, reports, surveys, CHANGE ORDERS, designs or SPECIFICATIONS.

25. SEPARATE CONTRACTS

25.1 The OWNER reserves the right to let other con-

tracts in connection with this PROJECT. The CONTRACTOR shall afford other CONTRACTORS reasonable opportunity for the introduction and storage of their materials and the execution of their WORK, and shall properly connect and coordinate his WORK with theirs. If the proper execution or results of any part of the CONTRACTOR'S WORK depends upon the WORK of any other CONTRACTOR, the CONTRACTOR shall inspect and promptly report to the ENGINEER any defects in such WORK that render it unsuitable for such proper execution and results.

25.2 The OWNER may perform additional WORK related to the PROJECT by himself, or he may let other contracts containing provisions similar to these. The CONTRACTOR will afford the other CONTRACTORS who are parties to such Contracts (or the OWNER, if he is performing the additional WORK himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of WORK, and shall properly connect and coordinate his WORK with theirs.

25.3 If the performance of additional WORK by other CONTRACTORS or the OWNER is not noted in the CONTRACT DOCUMENTS prior to the execution of the CONTRACT, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional WORK. If the CONTRACTOR believes that the performance of such additional WORK by the OWNER or others involves him in additional expense or entitles him to an extension of the CONTRACT TIME, he may make a claim therefor as provided in Sections 14 and 15.

26. SUBCONTRACTING

26.1 The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the WORK which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.

26.2 The CONTRACTOR shall not award WORK to SUBCONTRACTOR(s), in excess of fifty (50%) percent of the CONTRACT PRICE, without prior written approval of the OWNER.

26.3 The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of his SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

26.4 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the WORK to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the CONTRACT DOCUMENTS insofar as applicable to the WORK of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.

26.5 Nothing contained in this CONTRACT shall create any contractual relation between any SUBCONTRACTOR and the OWNER.

27. ENGINEER'S AUTHORITY

27.1 The ENGINEER shall act as the OWNER'S representative during the construction period. He shall decide questions which may arise as to quality and acceptability of materials furnished and WORK performed. He shall interpret the intent of the CONTRACT DOCUMENTS in a fair and unbiased manner. The

ENGINEER will make visits to the site and determine if the WORK is proceeding in accordance with the CONTRACT DOCUMENTS.

27.2 The CONTRACTOR will be held strictly to the intent of the CONTRACT DOCUMENTS in regard to the quality of materials, workmanship and execution of the WORK. Inspections may be made at the factory or fabrication plant of the source of material supply.

27.3 The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

27.4 The ENGINEER shall promptly make decisions relative to interpretation of the CONTRACT DOCUMENTS.

28. LAND AND RIGHTS-OF-WAY

28.1 Prior to issuance of NOTICE TO PROCEED, the OWNER shall obtain all land and rights-of-way necessary for carrying out and for the completion of the WORK to be performed pursuant to the CONTRACT DOCUMENTS, unless otherwise mutually agreed.

28.2 The OWNER shall provide to the CONTRACTOR information which delineates and describes the lands owned and rights-of-way acquired.

28.3 The CONTRACTOR shall provide at his own expense and without liability to the OWNER any additional land and access thereto that the CONTRACTOR may desire for temporary construction facilities, or for storage of materials.

29. GUARANTY

29.1 The CONTRACTOR shall guarantee all materials and equipment furnished and WORK performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be

necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments, or other WORK that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance BOND shall remain in full force and effect through the guarantee period.

30. ARBITRATION

30.1 All claims, disputes and other matters in question arising out of, or relating to, the CONTRACT DOCUMENTS or the breach thereof, except for claims which have been waived by the making and acceptance of final payment as provided by Section 20, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This agreement to arbitrate shall be specifically enforceable under the prevailing arbitration law. The award rendered by the arbitrators shall be final, and judgment may be entered upon it in any court having jurisdiction thereof.

30.2 Notice of the demand for arbitration shall be filed in writing with the other party to the CONTRACT DOCUMENTS and with the American Arbitration Association, and a copy shall be filed with the ENGINEER. Demand for arbitration shall in no event be made on any claim, dispute or other matter in question which would be barred by the applicable statute of limitations.

30.3 The CONTRACTOR will carry on the WORK and maintain the progress schedule during any arbitration proceedings, unless otherwise mutually agreed in writing.

31. TAXES

31.1 The CONTRACTOR will pay all sales, consumer, use and other similar taxes required by the law of the place where the WORK is performed.

CONTRACT SPECIFICATIONS

Bids for construction of shoreline stabilization measures on two areas of the Sullivan Lake shoreline (Areas A and B on Sheet 2) are being solicited by the Sullivan County Park and Recreation District (SCPRD). Specifications for work on each of these areas are presented below. Area A is approximately 750 feet of eroded shoreline that is to be stabilized with rip-rap revetment. Area B is approximately 350 feet of eroded shoreline that is to be stabilized with vegetation. The specifications are drawn in large part from the Indiana Department of Transportation (DOT) Standards and Specifications, 1988. As described in the Advertisement for Bids, the work on both areas may be bid as a single contract, or contracts for each area may be awarded separately. Work on either area must be closely coordinated with the SCPRD. Modifications to any previously agreed to plans for whatever reason are to be described in writing to the SCPRD. Action of the SCPRD Board of Directors will be required to approve any change orders, regardless of the impact to the cost of the project.

The exact boundaries of the areas to be stabilized are not apparent from Sheet 2. Prior to commencing work on either area, potential contractors will be shown the precise boundaries of the work to be performed by the SCPRD.

General Considerations

Site Access. Access to either of the sites designated on Exhibit 1 must be via routes approved by the SCPRD. All truck traffic must utilize the required routes, and no traffic will be permitted to use any other access unless specifically authorized by the SCPRD.

Tree Removal. Unless it is unavoidable, as determined by the Inspector, trees adjacent to the areas requiring regrading shall not be damaged or disturbed by the Contractor's operations. Any such damage will be repaired to the satisfaction of the SCPRD at the Contractor's expense.

Trash/Debris Removal. The Contractor shall remove and dispose of all waste materials and debris off-site and in a land area furnished by the Contractor and approved by the SCPRD.

Site Cleanup/Damage Repair. The contractor shall take all necessary precautions and measures to protect all properties from damage. All damage to public or private property, including roads, utilities, trees, shrubs, planting, etc. will be repaired to the satisfaction of the SCPRD at the Contractor's expense. On completion of the work at either site, the site will be completely cleaned of debris due to construction and left in a condition at least equivalent to the condition found.

Area A: Rip-rap Stabilization.

The area of the shoreline designated Area A on Sheet 2 is to be stabilized with Indiana Department of Transportation grade rip-rap revetment. Specifications for construction in this area are as described below. Cross-sections shown on Sheets 4 and 5 detail the placement of the rip-rap. The contractor will ensure that the rip-rap section of shoreline extends in a band from an elevation of 477 feet (two feet below normal pool) to 483 feet, the level of the Sullivan Lake emergency spillway. The band of shoreline extending from 483 feet to the top of the bank will be treated as a critical area and reseeded as per specifications below. The contractor will ensure that a maximum slope of 2:1 horizontal to vertical exists on the rip-rap section, and that the grade from the top of the rip-rap to the top of the bank shall be 3:1. Compaction of the fill material in the rip-rap area must be sufficient to support the weight of the rip-rap without causing slumping or settling. Geotextile fabric with pins placed at two (2) foot intervals will underlie the rip-rap area. Material excavated from the areas to achieve the required grade may be used as backfill.

Riprap Specifications. The riprap used in this project must be Indiana DOT revetment riprap. The gradation specifications for the riprap are as follows:

1. No individual piece is to weigh in excess of 120 pounds.
2. 90%-100% of the material must pass through a 12 inch sieve.
3. 20%-60% passes through a 6 inch sieve.
4. No more than 10% passes through a 1 1/2 inch sieve.

Reasonable care should be taken to obtain similar gradation for consecutive loads.

Placement. The riprap may be placed by dumping and shall be placed to the required thickness at the locations shown on the plans. Placement shall start from the base of the slope. Rip-rap shall not be allowed to roll downslope, and drop height of the rip-rap shall be kept to a minimum (approximately one foot). The thickness of the rip-rap layer shall be a minimum of 18 inches.

Geotextile. Geotextile fabric (filter fabric) will underlie the riprap. The material used for this purpose must be properly handled so as to avoid damage to its strength, toughness, or permeability. Exposure of the material to the elements between lay down and cover shall be a maximum of 14 days. The geotextile will be examined by the Inspector for defects, rips, flaws, deterioration, or damage. It will be replaced at the contractor's expense if damage is evident. The surface to receive the geotextile shall be prepared to a relatively smooth condition free of obstructions, depressions, and debris within the limits specified on the plans. Adjacent pieces of geotextile may be joined by sewing or pinning. The minimum

overlap shall be 18 inches, except when placed under water, where the overlap must be at least 3 feet. Securing pins must be steel, 3/16 of an inch in diameter, 18 inches long, pointed at one end, and fabricated with a head to retain a steel washer having an outside diameter of no less than 1 and 1/2 inches. Securing pins with washers shall be inserted through both strips of overlapped geotextile at a maximum of 3 foot intervals along a line through the mid-point of the overlap. The geotextile strip should be placed so that the lower strip is overlapped by the next higher strip. Pins should be driven until the washer bears against the material and secures it to the ground. Three foot maximum pin intervals shall be used over the entire surface to be covered.

The geotextile should be placed in such a manner that placement of riprap will not excessively stretch or tear it, and overlapping seams will not be torn apart. Construction equipment will not be allowed on the exposed geotextile.

Prior to laying the geotextile fabric, the contractor will stake the boundary of the 2:1 rip-rap slope for inspection of both grade and elevation. Inspection will also be required following installation of the geotextile material, after placement of the rip-rap, and after seeding of the area above the rip-rap.

Method of Measurement. Weigh tickets will be checked by the SCDPRD Inspector following each delivery to determine the quantity of riprap delivered to the site. Units of measure for the riprap will be in tons.

Revegetation. From an elevation of 483 feet (top of rip rap) to the top of the bank, the area will be treated as a critical area and reseeded using a R (rural) seed mixture applied at a rate of 110 pounds/acre. The mixture will have the following composition (on a per acre basis):

- 50 pounds alta or Kentucky 31 fescue
- 35 pounds perennial rye
- 25 pounds Kentucky bluegrass.

If requested by the SCDPRD, crown vetch seed may be applied with the above combination at a rate of 10 pounds per acre. Crown vetch plants may also be planted in this area, based on approval by the Inspector.

The seed mixture shall contain none of the following noxious weeds listed in the Acts of the General Assembly of the State of Indiana: Canada Thistle, Field Bindweed, Johnson Grass, Perennial Peppergrass, Perennial Sowthistle, Quack Grass, Russian Knapweed, or Wild Garlic. Seed will be purchased from sources of supply that have been sampled, tested, and reported by the State Seed Commission, Purdue University, and found to be satisfactory.

Prior to application of the seed mixture, the seed bed will be loosened to a depth of 3 inches. Fertilizer and agricultural limestone will be mixed and added to the upper two (2) inches of soil at a rate of 800 pounds per acre fertilizer and 1/2 ton per acre limestone.

Mulching. Within 24 hours of seeding the vegetated area, mulch (straw; chaff; clover, timothy, alfalfa, or soy bean hay) will be applied at a rate of two (2) tons per acre. The mulch must be dry; such condition will be determined by the Inspector prior to placing the mulch. In addition, it cannot contain any noxious weeds. Following spreading of the mulch, the Contractor must anchor the mulch by application of erosion control netting, or a tackifier meeting ASTM D-977 specifications.

Area B: Vegetative Stabilization.

The area shown on Sheet 2 as Area B will be stabilized using willow seedlings. The contractor will be responsible for all costs associated with ordering, shipment, and planting of the seedlings. Pussy willow, Salix discolor, is the recommended variety. If this species is not available, another shrub-like willow species can be substituted. The substituted species must be approved by the Sullivan County Park and Recreation District prior to ordering and planting. Pussy willow seedlings are available from the Warren County nursery, McMinnville, TN; phone: (615) 668-8941. The seedlings should be 24-36 inches in height. Local nurseries may also supply this variety, however several were contacted in February, 1991 with no success.

Care and Handling of the Plants

If the outside air temperature exceeds 35 F when the plants are delivered, the plants shall be planted immediately or placed in outside storage. If they are stored outside, the roots shall first be puddled in a solution of backfill and water and wrapped with moist straw, peat moss, or corn cobs. Plants delivered in boxes, wrapped bundles, or in other closed containers and which are stored inside may remain in the container for 48 hours from the time of delivery.

If the outside air temperature is less than 35 F, the plants shall be placed in inside storage immediately. Inside storage procedures shall be in accordance with the above requirements. Plants may be transferred to outside storage when the outside air temperature exceeds 35 F.

Preparation for Planting.

Prior to planting, the area to be planted will be re-graded to a minimum slope of 3:1 horizontal to vertical in accordance with the plans. The excavated material will be removed from the site and disposed of at

an upland location at no additional cost to the Sullivan County Park and Recreation District. The contractor will assume all liability for disposal of the excavated material.

Excavation for Plant Holes.

The Contractor will stake the location of holes for each plant, as well as the border of the area to be planted. The plant holes will be cylindrical in shape with the sides approximately vertical. Spacing between the holes shall be as directed above. Material within the area to be planted that is unsuitable for the growth of vegetation, such as rocks and boulders, shall be removed and disposed of as directed by the Inspector. If the plants have not been planted within 10 days after excavation of the holes, the holes shall be refilled and re-excavated at the time of planting. No additional payment will be made for this operation.

Planting.

Each seedling will be planted to a depth sufficient to completely cover the roots (approximately 3-5 inches). The soil should be tamped around the plant to hold it perpendicular. Water should be used to settle the soil and to eliminate air pockets around the roots. The top layer of soil immediately surrounding the plant should be loose and untamped. Spacing between plants should be 2 to 3 feet. The lower limit of the planted area should be at the normal pool elevation (479 feet). The planted area should extend to a minimum elevation of 483 feet, creating two rows of willows along the shoreline of Area B. Approximately 300 seedlings will be required.

Temperature inside the storage building shall be maintained between 35 F and 55 F. Plants shall not remain in storage, either inside or outside, for more than 7 days unless conditions are unfavorable for planting.

If, after staking or excavating the plant holes, it becomes apparent that parts of the area to be planted are unsuitable for planting due to groundwater accumulation, flooding, or poor soil conditions, the plant holes shall be relocated as directed by the Inspector. Such relocation shall be done with no additional payment.

OPERATIONS AND MAINTENANCE

Area A: Rip-rap stabilization.

On completion of the rip-rap work at Area 1, an operations and maintenance plan should be implemented. The shoreline should be inspected on a quarterly basis to prevent excessive shifting or loss of material. Frequent sliding in a particular location may require removal of some of the rip rap material, or regrading in the immediate area.

The geotextile material underneath the rip rap should also be examined to ensure that there is still complete coverage over the area and that the pins holding the material down have not been displaced. Quarterly spot checks at several points along the protected shoreline should be sufficient to detect problems with the rip-rap or textile material in this area.

In the vegetated portion of Area A, the planted grass will need to be mowed as required during the growing season. Watering may be necessary during prolonged dry spells.

Area B. Vegetative stabilization.

With the exception of some annual pruning, the willows planted along the shoreline in Area 2 will require minimal maintenance. Growth should be relatively rapid and the seedlings root system will quickly stabilize the affected area. The degree of pruning should be a function of the desired height and breadth of the plants. The function of the plants with respect to shore stabilization will not be greatly influenced if they are kept pruned below their maximum height of 10-15 feet. Annual "topping" of the plants should increase their breadth, creating a denser growth along the shoreline.

INSPECTION

During and on completion of the work in either Area A or B, the SCPRD Inspector will determine whether the specifications have been met and if the work has been completed to the satisfaction of the SCPRD. The Inspector will have experience in shoreline stabilization and erosion control, and the ability to determine whether all specifications have been met.

For Area A, an inspection will be conducted after each of the following components of the work have been completed:

- Establishment of specified grades
- Installation of geotextile material
- Installation of rip-rap
- Seeding and mulching of the upper section
- Site clean-up.

Satisfactory performance will be required at each step of the project.

For Area B, the SCPRD Inspector will examine the willow seedlings as soon as possible following their arrival from the nursery. The purpose of this will be to ensure that they are viable, that the roots are sufficiently moist, and that all are within the size class ordered (24 to 36 inches). If the plants cannot be planted immediately, then the Inspector will ensure that they are properly stored until they can be planted. Additional inspections for Area B will be conducted after each of the following:

- Establishment of specified grade
- Planting of not more than 10% of the total number of seedlings required
- Completion of planting
- Site clean-up.

The Inspector will ensure that care is taken in the handling of the seedlings and that all are planted at required depths.

CONTRACT DRAWINGS

The following are the accompanying drawings for the Sullivan Lake stabilization project:

SHEET NUMBER	TITLE
1.	Cover Sheet
2.	Plan of Existing Bank Erosion Showing Areas A and B
3.	Shoreline Protection Details
4.	Area A Cross-Sections
5.	Area A Cross-Sections (Concluded)
6.	Area B Cross-Sections

The following changes should be made to the Contract Drawings:

1. On Sheet 3, Shoreline Protection Details, the note referring to the grade for the vegetated section of Area A (above 483 feet elevation) incorrectly reads 5:1. The correct grade for the area above the rip-rap is 3:1.
2. The note on the same detail regarding sand backfill is to be deleted.

The drawings included on Sheet 3 that are labeled Area A or Area B are intended to be used for construction purposes. All other drawings and information are for reference and information use only.

Contract Drawings